KANTOROVICH, B. V.

PA 244T66

USSR/Engineering - Heat, Combustion Dec 52

"On the Calculation of the Combustion Process in a Fuel Flow," B. V. Kantorovich

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 12, pp 1788-1793

Discusses method previously worked out by author for analysis of heterogeneous burning of moving mass of fuel particles. Concludes that further development of this method in direction of accounting for thermal conditions promotes engineering calculation of combustion process and analysis of dynamics of

244T66

this process, in which mutual connection exists among 3 basic factors: reacting and burning out of fuel, transfer of gas and fuel, and heat evolution and transfer. Submitted by A. B. Chernyshev, Corr Mem, Acad Sci USSR.

244T66

KANTOROVICH, B. V.

USSR/Engineering - Heat, Combustion 21 Mar 53

"Problems of the Theory of Heterogenous Combustion and Gasification of a Fuel Flow," B. V. Kantorovich, Inst of Combustible Minerals, Acad Sci USSR

DAN SSSR, Vol 89, No 3, pp 463-466

On the basis of previously suggested (IAN, OTN No 4, 1947; ibid, No 7, 1948; ibid, No 12, 1952; Trudy IGI AN SSSR, Vol 2, 1950) method for analyzing combustion process of a fuel flow, studies basic dynamic characteristics of this process, such as length of combustion zone and distribution of temps along this zone. Submitted by Acad M. V. Kirpichev 27 Dec 52.

272T28

Kantorovich, B. V.

USSR/Chemistry

Card 1/1 Pub. 22 - 30/49

Authors : Kantorovich, B. V.

Title : Critical comments on the I. E. Kubynina report entitled, "Equations of Heat Transfer and a Burning Substance"

Periodical : Dok. AN SSSR 101/3, 511-513, Mar 21, 1955

Abstract : Critical review is presented on the report by I. E. Kubynina entitled, "Equations of Heat Transfer and Burning Substance," published in one of the volumes of Doklady Akademii Nauk (Reports of the Academy of Sciences USSR). The reviewer points out that the report was written under false physical premises and contains many mathematical errors. Three USSR references (1947-1952).

Institution : .....

Presented by : Academician A. N. Frumkin, October 25, 1954

KANTOROVICH, Boris Veniaminovich; LANOVSKAYA, M.P., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Pumps and blowers] Nasosy i vozdukhoduvnye mashiny. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 330 p. (MLRA 10:1)
(Pumping machinery) (Blowers)

AID P - 5015

Subject : USSR/Engineering

Card 1/1 Pub. 110-a - 17/17

Authors : Kantorovich, B. V., Prof. Dr. Tech. Sci., V. M. Ivanov, Kand. Tech. Sci.

Title : On the book by G. F. Knorre "Combustion, What Is It?" Gosenergoizdat, 1955, 223 p. (Book-Review).

Periodical : Teploenergetika, 9, 64, S 1956

Abstract : This is an favorable book review, although some shortcomings are pointed out.

Institution : None

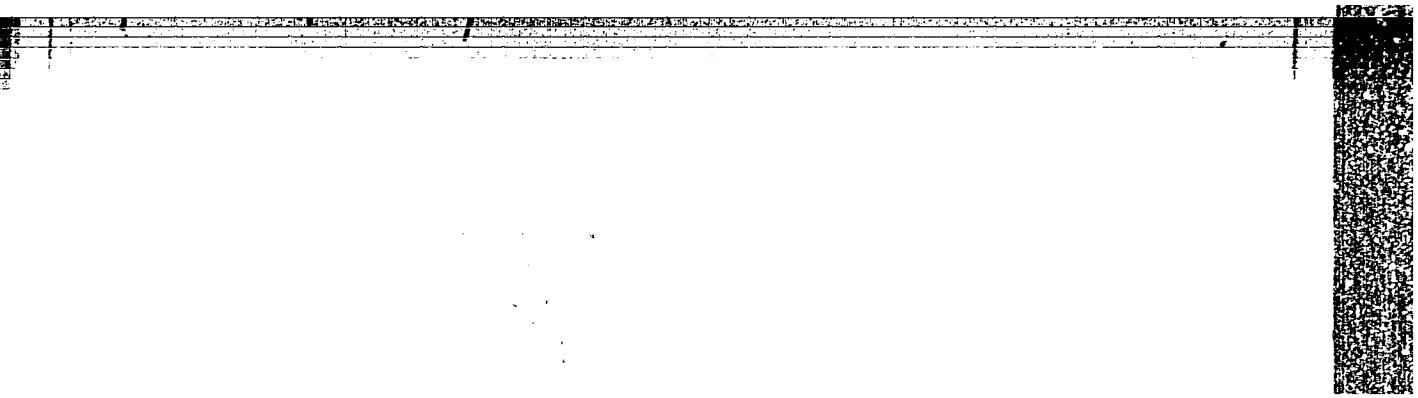
Submitted : No date

КАНТОРОВИЧ, Б.В.

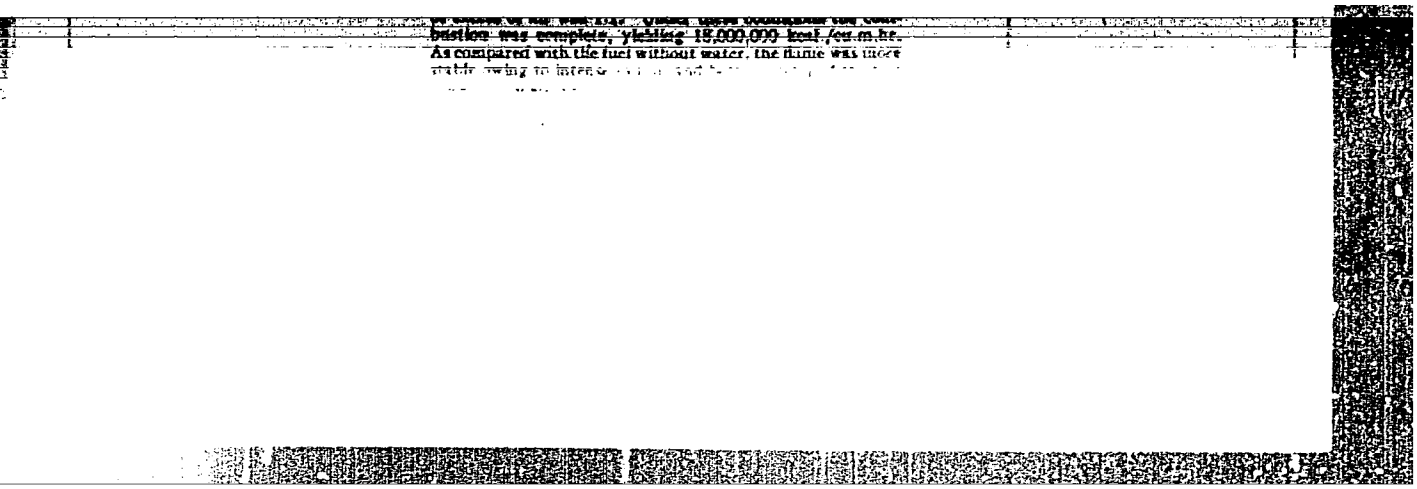
GINZBURG, D.B., doktor tekhnicheskikh nauk, redaktor; KANTOROVICH, B.V., doktor tekhnicheskikh nauk, professor, redaktor; PUTRYANSKIY, M.F., doktor tekhnicheskikh nauk, professor, redaktor; BARK, S.Ye., inzhener, redaktor; POLUBOYARINOV, G.N., inzhener, redaktor; MARTYNOVA, M.P., vedushchiy redaktor; IL'IN, B.M., tekhnicheskiy redaktor

[Gasification of solid fuel; transactions of the 3rd scientific and technical conference] Gazifikatsiia tverdogo topliva; trudy tret'ei nauchno-tekhnicheskoi konferentsii. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1957. 373 p. (MLRA 10:4)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy promyshlennosti. Moskovskoye oblastnoye pravleniye.
(Coal gasification) (Gas producers)
(Peat gasification)



APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000520420006-2"



KANTOROVICH, B.V.

24-8-21/34

AUTHORS: Delyagin, G.N., Ivanov, V.M. and Kantorovich, B.V. (Moscow).

TITLE: On the application of solid processed fuel in gas turbines. (O primenenii tverdogo formovannogo topliva v gazoturbinnykh ustanovkakh).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.8, pp.134-137 (U.S.S.R.)

ABSTRACT: Use of solid fuel in gas turbines would be facilitated by a process of "pyrogenetic" breaking down of gas and weakly coking coal proposed by L. M. Sapozhnikov (3), since it enables obtaining strong fuel of any desired dimensions and shape with a porosity of 40 to 50%. The process consists of crushing the coal to sizes of between 0 and 3 mm, feeding the powder in a vortex chamber where it is heated by means of hot gases for 0.5 to 2 secs to a temperature corresponding to the plastic state, i.e. 380 to 450 C and subsequently shaping the thus obtained mass into bits of suitable shape and dimension by applying a pressure of 2 to 5 kg/cm^2. It is claimed that high quality fuel can be obtained by this process and that the obtained fuel is more suitable for gas turbines than otherwise processed fuel. Another method which is at present being tested by the Institute of Mined Fuels Ac.Sc. (Institut Goryuchikh Iskopayemykh AN SSSR) is the production by the above mentioned process of a

Card 1/2

KANTOROVICH, B. V.

133-10-25/26

AUTHOR: Druskin, L. I., Candidate of Technical Sciences
Ivanov, V. M., Candidate of Technical Sciences and
B.V. Kantorovich, Professor, Doctor of Technical Sciences.

TITLE: Calculation of Temperatures in Tunnel-Type Gas Burners
(Raschet temperatur v tunnel'nykh gazovykh gorelkakh)

PERIODICAL: Stal', 1957, No.10, pp. 951-957 (USSR).

ABSTRACT: On the basis of experimental data a method of calculating the temperature along the chamotte tunnel is proposed. The experimental part of the work was carried out by L. I. Druskin on an experimental installation of the Institute of Mospodzemproyekt, the diagram of which is shown in Figure 1, and the experimental tunnel burners are shown in Figure 2. Data on air-gas mixtures used in the experiments - Table 1. Experimental results are shown in Figures 3-8 and Table 2. It is concluded that: 1) Satisfactory flameless combustion of gas in chamotte tunnel burners can be obtained with excess air not exceeding 1.1 (providing the mixing of gas and air is good). 2). The combustion of air-gas mixture in chamotte tunnel burners with incandescent walls takes place practically uniformly across the whole
Card 1/3 cross-section of the burner. 3). During the process

Calculation of Temperatures in Tunnel-Type Gas Burners

of combustion of air-gas mixture in such burners at temperatures 1000-1500°C intermediate combustion products - methanol and formaldehyde are formed. 4) The approximate formulae derived on the basis of general equations of combustion of a gas stream for calculating the distribution of oxygen concentrations, burning out of the combustion mixture and the temperature along the length of a chamotte tunnel burner as well as the coefficient m, characterising the combustion process which was obtained on the basis of generalising the experimental results, allowed the plotting of calculated curves of the distribution of oxygen concentrations and temperatures along the length of the burner (taking into consideration radiation through the outlet) which agreed satisfactorily with the experimental data. 5) The treatment of experimental data in the dimensionless form within the limits of the combustion zone and cooling zone indicated the existance of straight line relationships (26) and (27), using which the calculation of temperatures in tunnel burners is even more simplified. There are Card 2/38 figures, 1 table and 4 references, all are Slavic.

ASSOCIATION: Institute of Mineral Fuels AS USSR (Institut Goryuchikh Iskopayemykh AN SSSR)

133-10-25/26

Calculation of Temperatures in Tunnel-Type Gas Burners

AVAILABLE: Library of Congress

Card 3/3

KANTOROVICH, B.V.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor and Jet Fuels. Lubricants. I-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2583

Author : Ivanov, V.M., Kantorovich, B.V., Rapiovets, L.S., Khotuntsev, L.L.

Inst : Academy of Sciences USSR

Title : Fuel Emulsions for Combustion and Gasification.

Orig Pub : Vestn. AN SSSR, 1957, 27, No 5, 56-59

Abstract : In a laboratory combustion chamber, with an air-excess coefficient α = 1.0; 1.1; 1.2; 1.5 and 2.0, combustion was carried out of stable water emulsions of highly viscous fuels, of the "water - oil" type, produced in a high-speed disperser of the Khotuntsev-Pushkin design. Emulsions fed into the combustion chamber were preheated:

Card 1/3

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor and Jet Fuels. Lubricants. I-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2583

that of mazut at 100-110°, that of peat tar at 88°, and those of shale and Cheremkhovskaya tar at 65-70°. Rate of feed of the emulsions was 2-4 kg/hour, and the thermal load, with a combustion chamber volume of 0.00094 m^3, was of 10-25 kcal/m^3 per hour. The experiments showed that on combustion of fuel emulsions produced from heavy, viscour and water-containing petroleum residues and tars, a uniform and intensive combustion is attained, with a high degree of completeness of the combustion, using a minimal coefficient of air-excess. Observations were made of the behavior of individual drops of different liquids (kerosene, kerosene emulsion, water-mazut emulsion) on their descent into stationary air heated at 600-700°. The occurence of a "micro-explision" was noted, which decreases the dimensions of the drops, contributes to increased rate of

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Card 3/3

KANTOROVICH, B.V.

"Theoretical and Experimental Research on the Gasification of Solid Fuels," paper submitted for the 1st National Congress, Czechoslovak Scientific Technical Society for Fuel Utilization, Karlovy Vary. Czechoslovakia, 12-17 May 58.

31300
S/124/61/000/010/035/056
D251/D301

26.2131

AUTHOR: Kantorovich, B.V.

TITLE: Problems of the theory of combustion of a current of fuel

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 10, 1961, 86, abstract 10 B610 (V sb. Goreniye dvukhfazn. sistem, M., AN SSSR, 1958, 50-123)

TEXT: Combustion processes are considered for a current of fuel in the solid-powder, liquid and gaseous phases. An approximate law is found by theoretical methods for the complete combustion and for the distribution of temperatures along the current of fuel which is compared with the experimental data of the author and other investigators. The combustion process for solid-powder fuels, and the conditions of combustion of gaseous and liquid fuels are analyzed. The influence exerted on the length of the combustion zone by the coefficient of air excess is considered, and the dependence of

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X

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S/124/61/000/010/035/056
D251/D301

Problems of the theory...

the vaporization of particles of liquid fuel on the burning of the vapor is established. 40 references. [Abstracter's note: Complete translation]

X

Card 2/2

KANTOROVICH, B.V.

11(1) p. 6 PHASE I BOOK EXPLOITATION SOV/1372

Akademiya nauk SSSR. Energeticheskiy institut

Goreniye dvukhfaznykh sistem; sbornik dokladov na obshchemoskovskom seminare po goreniyu pri Energeticheskom institute AN SSSR (Combustion of Two-phase Systems; Collection of Reports of the All-Moscow Seminar on Combustion at the U.S.S.R. Academy of Sciences, Power Institute) Moscow, Izd-vo AN SSSR, 1958. 123 p. 3,200 copies printed.

Resp. Ed.: Khitrin, L.N., Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: Meleyev, A.S.; Tech. Ed.: Kashina, P.S.; Council of the Seminar: Khitrin, L.N., Corresponding Member, USSR Academy of Sciences (Chairman); Knorre, G.F., Doctor of Technical Sciences, Honored Worker in Science and Technology, Professor, Deputy Chairman; Shchetnikov, Ye.S., Doctor of Technical Sciences, Professor Deputy Chairman); Vanichev, A.P., Doctor of Technical Sciences; Voyevodskiy, V.V., Corresponding Member, USSR Academy of Sciences; Golovanov, N.V., Candidate of Chemical Sciences; Zhuk, D.S., Candidate of Chemical Sciences; Inozemtsev, N.V., Doctor of Technical Sciences, Honored Worker in Science and Technology, Professor; Kantorovich, B.V., Doctor of Technical Sciences; Kogarko, S.M., Doctor of Chemical Sciences; Lebedev, B.N.,

Card 1/6

Candidate of Technical Sciences; Nikitin, K.A., Candidate of Technical Sciences; Sokolik, A.S., Doctor of Chemical Sciences; Golovina, Ye.S., Candidate of Technical Sciences (Secretary).

PURPOSE: This collection of articles is intended for scientists working in the field of combustion.

COVERAGE: This is the first issue of proceedings of the Moskovskiy seminar po voprosam goreniya (Moscow seminar on problems of combustion). It is devoted to problems of ignition and combustion processes in two-phase liquid-vapor fuel systems, and to the general characteristics of combustion in a fuel stream. The papers published in this number were presented at the seminar in 1955/56.

TABLE OF CONTENTS:

The paper discusses the combustion of fuel droplets from the point of view of the diffusion theory of G.A. Varshavskiy [2]. The following characteristics are determined: rate of combustion, radius of the combustion zone, droplet and combustion zone temperatures, temperature areas and partial pressures around the droplet. Two methods were used: 1) combustion of large model droplets in a spherical burner (Fig. 2), 2) combustion of droplets suspended from a filament. Data were calculated for the following fuels: kerosene, benzene, isooctane, and ethyl alcohol. It was determined that the rates of burning for benzene and isooctane are similar. The rate for kerosene is on the average 25 per cent lower than for benzene, and the rate for alcohol is lower than for kerosene. The theoretical and observed temperatures of the droplets show close values, with the observed temperatures lower than the boiling points of fuel for all pressures of air. Photographs of isooctane droplets burning at various air pressures show that the pressure drop results in the flame front receding from the droplet surface and in the change of the flame form to spherical. Natural convection for droplets 100 - 200 is negligible. There are 9 figures, 2 tables, and 5 references, 2 of which are Soviet and 3 English.

Tikhomirov, V.G. Fundamental Combustion Characteristics of a Two-phase Fuel-air Mixture (October 14, 1955) 19

The paper discusses the fundamental combustion characteristics of two-phase fuel-air mixtures in a turbulent flow. A method was devised for the study of a predetermined sector of the flow with a given droplet size, and mixture composition. Flame propagation in such mixtures is due to heat flow from the burning droplets towards nonburning droplets in a medium which does not necessarily contain a combustible fuel-vapor concentration. It was determined that injection of atomized fuel into the air stream adds to the turbulence of this stream. The rate of flame propagation is modified by the turbulence of the flow. The time of combustion of the two-phase mixture, which is the time during which the components of the mixture remain in the combustion zone, has a higher value than that for a homogeneous mixture, especially for low turbulence of the stream. There are 4 figures and 5 references, 4 of which are Soviet and 1 English.

Rud'ko, A.K. Concentration Limits of Flame Propagation in a Laminar Two-phase Mixture (November 25, 1955) 26

The author presents the approximate solution for the problem of normal propagation and concentration limits of flame propagation in laminar two-phase fuel-air mixtures. The results are compared with experimental data obtained from the study of concentration limits of flame propagation (with spark ignition) in air-alcohol droplet mixtures with a flow rate below 0.5 m/sec. It was determined that there exists a satisfactory agreement of the experimental data with the theoretical. The two-phase mixtures show an expanded concentration range of the combustible mixture. The deterioration of dispersivity over a certain limit in mixtures with a low content of vaporized fuel results in a nonflammable mixture for any summary concentration of the fuel. The concentration limits of inflammability become narrower during the cooling of the mixture and during a temperature drop. There are 13 figures and 5 references, 4 of which are Soviet and 1 English.

Kantorovich, B.V. Problems in the Theory of Combustion of a Fuel Stream (June 13, 1956) 50

This paper presents theoretical and experimental considerations on the combustion processes occurring in a stream of fuel (pulverized, liquid, and gaseous). The essential differences between the streams of various fuels are indicated in the article. Solid fuels: coal ARSh from the Donets Coal Basin, coal from the Kuznetsk Basin, Chelyabinsk Basin and the Moscow Basin; peat, petroleum coke. Liquid fuels: Diesel oil, ethyl alcohol. The basic equations describing the combustion process are: 1) the stoichiometric equation of mass transfer 3) the equation of state of the gas medium 4) energy equation, and 5) the kinetic equation. Atomized liquid fuels require an additional equation for the evaporization of fuel particles. There are 33 figures, 223 equations, and 40 references, 37 of which are Soviet and 3 English.

AVAILABLE: Library of Congress

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KANTOROVICH, Boris Veniaminovich; PREDVODITELEV, A.S., otv.red.;
IVANOV, V.M., red. izd-va; LAUT, V.G., tekhn.red.

[Fundamentals of the theory of combustion and gasification of solid fuel] Osnovy teorii goreniia i gazifikatsii tverdogo topliva. Moskva, Izd-vo Akad.nauk SSSR, 1958. 598 p. (MIRA 11:12)

1. Chlen-korrespondent AN SSSR (for Predvoditelev).
(Combustion) (Coal gasification)

KANTOROVICH, B.V.; FINYAGIN, A.P.

Effect of air excess on the combustion process of pulverized fuel.
Insh.-fiz.zhur. no.1:24-33 Ja '58. (MIRA 11:7)

1.Institut goryuchikh iskopayemykh AN SSSR, g.Moskva.
(Coal, Pulverized) (Combustion)

YESIN, V.V.; KANTOROVICH, B.V.; SHIGAYEV, N.N.

Effect of volatile substances on the combustion rate of pulverized fuels at various pressures [with summary in English]. Insh.-fiz. zhur. 1 no.8:52-58 Ag '58. (MIRA 11:8)

1.Institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva Moskva.

(Combustion)

SOV/96-58-8-16/22

AUTHOR: Kantorovich, B.V. (Doctor of Technical Science)

TITLE: The Distributions of Concentration and Temperature in the Combustion Zone of a Flow of Fuel (O raspredelenii kontsentratsiy i temperatur v zone goreniya potoka topliva)

PERIODICAL: Teploenergetika, 1958, Nr 8, pp 78-83 (USSR)

ABSTRACT: Combustion of a flow of fuel is accompanied by reduction in the concentrations of fuel and oxygen in the direction of motion and simultaneous evolution of heat and heat exchange. These subjects are considered mathematically in the present article for the case of uniform fuel flow. The usual shape of the temperature distribution curve is indicated in Fig 1, which also includes a curve showing the proportion of fuel consumed at any point. The maximum temperature may occur within the combustion zone or at the end of it. A general solution of the problem presents considerable mathematical difficulties, but if appropriate simplifying assumptions are made for particular cases, formulae can be obtained that correctly represent the course of combustion. Complex analysis of the problem is better than considering the combustion of isolated particles of fuel or individual

Card 1/4

aspects of the process, because it gives a more complete answer. It is incorrect to consider heat-exchange in furnaces without including the combustion process. The object of this article is to direct attention to one important side of the complex method; the establishment of the inter-relationship between combustion and heat exchange in furnaces. To do this, use is made of formula (2) which, though approximate, is convenient and correctly reflects the main relationships of fuel combustion. Expressions are then derived for the length of the combustion zone, the temperature distribution therein and the magnitude and position of the maximum temperature. A criterion is introduced that is applicable to large furnaces, but for smaller ones a further criterion is required and derived. To calculate heat-exchange in the combustion zone of a furnace, it is necessary to know the law of fuel combustion; the law follows from the kinetic equation of the process of fuel combustion, which is based on the characteristics of the particular process. Equation (2), which has been checked

The Distributions of Concentration and Temperature in the Combustion Zone of a Flow of Fuel

experimentally for pulverised solid fuel and liquid fuel, may be used to a first approximation. Formula (18) gives the effective temperature for use in calculating the heating surface in the heat-exchange part of the furnace. A somewhat more accurate but more complicated expression is given in equation (21). The accuracy of the two equations is compared in a numerical example to show that when ta temperature-drop in the furnace is great the usual formula (18) overestimates the mean effective temperature. The results of experimental investigations of the combustion process of atomised liquid fuel carried out in the Institute of Mineral Fuels of the Acad.Sci. of the USSR were worked out by means of the relationships given in this article. The test results included the temperature along the combustion zone and beyond it, the concentrations of the combustion products, as determined by gas analysis, and calorimetric measurements made in different zones by means of water screens. Various results are recorded, for a combustion chamber of 220 mm diameter, 630 mm long, burning diesel

The Distributions of Concentration and Temperature in the Combustion Zone of a Flow of Fuel

fuel at rates of 15 - 30 kg/hour and pressures of 1-7 atms using air-blast. Maximum temperatures are plotted in Fig 2 and the ratio of the effective to the maximum temperature in Fig 3. The two lines correspond to different types of air guide apparatus. Figs 4 and 5 give similar curves obtained with a combustion chamber of 65 mm diameter burning ethanol at a rate of 0.93 - 8.2 kg/hr at pressures of 1 - 7.25 kg/cm^2. It is concluded that the methods of treatment described give a good generalisation of experimental data on furnaces and combustion chambers, making allowance for the distributions of concentrations and temperature.
There are 6 figures, 11 literature references (Soviet)

ASSOCIATION: Institut goryuchikh iskopayemykh AN SSSR (Institute of Mineral Fuels of the Acad.Sci. of the USSR)

1. Fuels--Combustion 2. Liquid flow--Applications 3. Oxygen--Applications 4. Mathematics--Applications

Card 4/4

KANTOROVICH, B.V.; MELYAGIN, G.N.

Investigating the combustion process of pyrogenic pelletized fuel. (MIRA 12:12)
Trudy IGI 10:206-209 '59.
(Briquets (Fuel)--Testing)) (Combustion)

KANTOROVICH, B.V.

PHASE I BOOK EXPLOITATION SOV/3731

Akademiya nauk SSSR. Institut goryuchikh iskopayemykh

Gazifikatsiya i goreniye topliva (Fuel Gasification and Combustion) Moscow, Izd-vo AN SSSR, 1959. 227 p. (Series: Its: Trudy, Vol 11) Errata slip inserted. 1,800 copies printed.

Ed.: N. V. Lavrov; Ed. of Publishing House: V. N. Pokrovskiy; Tech. Ed.: I. N. Dorokhina.

PURPOSE: This collection of articles is intended for scientific research workers and engineers studying combustion processes and solid fuel gasification.

COVERAGE: This collection concerns the theoretical and experimental study of the mechanism of chemical reactions occurring in combustion and gasification. Results of the isotopic method of studying the gas generating process and its reactions, and the reaction of carbon monoxide and heated coal are analyzed and the pilot plants used in this study are described. Reactions of coal combustion, coal oxidation, methane dissociation and conversion are discussed and their equilibrium constants given in tables. The processes of methane oxidation by oxygen and synthesis-gas production by oxidizing natural gas with the subsequent reduction of oxidation products by carbon are analyzed as is the effect of an excessive amount of air on the burning process of powdered solid fuel. The utilization of heavy petroleum residue and tar for combustion and gasification purposes is also discussed along with the principles of fluidization. Analysis, routine control and intensification of physical and chemical processes by means of ultrasonic vibrations are also covered. No personalities are mentioned. References accompany all but the first article.

TABLE OF CONTENTS:

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000520420006-2"

IVANOV, V.M., kand. tekhn. nauk; KANTOROVICH, B.V., doktor tekhn. nauk; RAPIOVETS, L.S., inzh.; FROTUNTSEV, L.L., kand. tekhn. nauk

Water-soaked peat tars from gas producers used as fuel. Torf. prom. 36 no.7:30-32 '59. (MIRA 13:3)

1. Institut goryuchikh iskopayemykh AN SSSR.
(Peat) (Tar) (Fuel)

KANTOROVICH, Boris Veniaminovich. Prinimal uchastiye IVANOV, V.M., kand. tekhn.nauk. AGROSKIN, A.A., prof., doktor tekhn.nauk, retsenzent; PITIN, R.N., kand.tekhn.nauk, nauchnyy red.; LANOVSKAYA, M.R., red.izd-va; KARASEV, A.I., tekhn.red.

[Introduction to the theory of coal combustion and gasification] Vvedenie v teoriiu goreniia i gazifikatsii tverdogo topliva. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 355 p. (MIRA 13:10)
(Combustion) (Coal gasification)

KANTOROVICH, B. V., and DELYAGIN, G. N.

"Mass Transfer in the Process of Fuel Combustion in a Flow."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

DELYAGIN, G.N.; KANTOROVICH, B.V.; ATENKOV, S., tekhn. red.

[Mass transfer in the combustion of fuel in fluid flow; Conference on Heat and Mass Transfer, Minsk, January 23-27, 1961] Massoobmen v protsesse goreniia topliva v potoke; soveshchanie po teplo-i massoobmenu, g. Minsk, 23-27 ianvaria 1961 g. Minsk, 1961. 20 p. (MIRA 15:2)

(Combustion) (Fuel) (Mass transfer)

STARK, Sergey Borisovich; KANTOROVICH, B.V., prof., doktor tekhn. nauk, retsenzent; KOSTOCHKIN, V.N., prof., doktor tekhn. nauk, retsenzent; LELYAVIN, N.Ya., dotsent, kand. tekhn. nauk, retsenzent; ARUSTAMOVA, TS.T., dots., kand. tekhn. nauk, retsenzent; KISELEV, V.I., dots., kand. tekhn. nauk, retsenzent; SUSHKIN, I.N., inzh., retsenzent; BRINZA, V.N., red.; ISLENT'YEVA, P.G., tekhn. red.

[Fundamentals of hydraulics, pumps and air-blowing machines; collection of problems] Osnovy gidravliki, nasosy i vozdukhoduvnye mashiny; sbornik zadach. Izd.2., perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 458 p. (MIRA 14:9)
(Hydraulics) (Pumping machinery) (Blowers)

KANTOROVICH, Boris Veniaminovich; KUZNETSOV, Nikolay Kuz'mich; Prinimali uchastiye: GRIBANOV, I.P.; KAZARNOVSKIY, Yu.E.; FLORINSKIY, M.M., retsenzent; FLEKSER, Ya.N., retsenzent; YELIZAVETSKAYA, G.V., red.; DEYEVA, V.M., tekhn. red.

[Hydraulics, water supply, and hydraulic power plants] Gidravlika vodosnabzhenie i gidrosilovye ustanovki. Moskva, Izd-vo sel'khoz. lit-ry, zhurnalov i plakatov, 1961. 550 p. (MIRA 15:1)
(Hydraulic engineering)

11,6300 26.2131

3574
S/124/62/000/003/017/052
D237/D301

AUTHORS: Kantorovich, B.V., and Ivanov, V.M.

TITLE: Process of combustion of a stream of fuel with simultaneous vaporization of water within the reaction space

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1962, 45, abstract 3B258 (Sb. Ispol'zovaniye goryuchikh gazov v nar. kh-ve. M., AN SSSR, 1961, 22 - 31)

TEXT: An original system is considered of obtaining a gas-water vapor mixture of high parameters (P = 60 kg/cm^2 and T = 600°-750°C) for gas-water vapor turbines. Its distinct feature is that of high intensity combustion of fuels in the combustion chamber with high thermal gradients and simultaneous vaporization of atomized water, injected into the reaction zone of the chamber. Experimental investigations of such a process have shown that it is possible, in principle, to design it with the coefficient of air excess near to unity, pressures of 30 - 50 kg/cm^2 and thermal intensities of 200 x 10^6 - 300 x 10^6 kcal/m^{3}hr. At the same time, heat losses to the sur-

Card 1/3

Process of combustion of a ...

rounding medium do not exceed 0.5 %. Experiments were performed in a combustion chamber of diameter 120 mm and length 335 mm and natural gas, paraffin, Diesel fuel and water-fuel emulsions of the above fuels were used, in a stream of nitrogen-oxygen mixture where the oxygen concentration was near to that in air, under pressures up to 50 kg/cm^2, with coefficients of air excess from 0.9 to 1.5; maximum gas temperature in the combustion zone was 1500 - 1600°C and differed from the temperature of the wall by 300°C. A deduction was made on completion, under experimental conditions, of the process of combustion within the reaction space of the combustion chamber with a high degree of combustion and in the absence of hydrogen and carbon monoxide in the products of combustion. In the zone of vaporization of water the combustion ceases and the temperature fell to 600 - 650°C. An analysis is given of the aerodynamical investigation of distribution of gaseous streams in the combustion chamber and it shows that the most important in the system was the arrangement resulting in the motion of the gas with a high water-vapor content along the walls of the chamber towards the base of the flame jet. This arrangement resulted in favorable conditions

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for the performance of the steam generator. The stream motion is ingeniously investigated by determining the concentration distribution of CO_2 contained in air. Also, the results are given of the investigation of the process of evaporation of a separate drop of water in the stationary medium which was based on the method of continuous feed of the drop, making it possible to conduct the investigation with a constant area of evaporation. Given are the relationships between the coefficient of heat transfer of the drop during its evaporation, radius of the drop and the temperature of the surrounding medium, with the radius varied from 0.5 to 1.6 mm, and the temperature from 400°C to 850°C, which show a complex interdependence of the coefficient of heat transfer, radius of the drop and temperature of the medium during the evaporation of a drop. [Abstractor's note: Complete translation].

Card 3/3

GALUSHKO, P.N.; KANTOROVICH, B.V.

System of reactions involved in the interaction of steam with carbon. Trudy IGI 16:139-143 '61. (MIRA 16:7)
(Carbon) (Steam)

GALUSHKO, P.N.; KANTOROVICH, B.V.

Kinetics of the reaction C + H_2O at low temperatures. Trudy IGI 16:144-147 '61. (MIRA 16:7)
(Carbon) (Steam) (Chemical reaction, Rate of)

GALUSHKO, P.N.; KANTOROVICH, B.V.

Effect of H_2 and CO on the rate of the reaction C + H_2O. Trudy IGI 16:148-150 '61. (MIRA 16:7)
(Carbon) (Steam) (Hydrogen)

IVANOV, Viktor Mikhaylovich; KANTOROVICH, B.V., doktor tekhn. nauk, prof., otv. red.; POPOV, V.M., red. izd-va; DOROKHINA, I.N., tekhn. red.

[Fuel emulsions] Toplivnye emul'sii. Moskva, Izd-vo Akad. nauk SSSR, 1962. 215 p. (MIRA 15:7)
(Liquid fuels) (Emulsions)

KANTOROVICH, B.V.

Mixing of gases flowing through cylindrical pipes. Trudy IGI 19[illegible]-9 '62. (MIRA 16[illegible])

(Gas flow)

DELYAGIN, G.N.; KANTOROVICH, B.V.

Mass and heat transfer in the process of combustion in an air stream. Trudy IGI 12:10-23 '62. (MIRA 16:4)
(Fuel) (Mass transfer) (Combustion)

IVANOV, V.M.; KANTOROVICH, B.V.; LEBEDEVA, G.Ye.; TRIFONOVA, K.B.

Prospects for using steam and gas processes for technological purposes. Trudy IGI 19:114-121 '62. (MIRA 16:4)
(Gas producers)

S/846/62/019/000/006/008
E071/E151

AUTHORS: Delyagin, G.N., Ivanov, V.M., and Kantorovich, B.V.

TITLE: The effective utilisation of fuels together with water

SOURCE: Akademiya nauk SSSR. Institut goryuchikh iskopayemykh. Trudy. v.19. 1962. Novyye metody szhiganiya topliv i voprosy teorii goreniya. 59-65

TEXT: This is a survey of work of the Institute and associated organisations on the efficient utilisation of fuels with a high moisture content. The hydro-transportation of coal is associated with an increase in the amount of coal slurries, which require the development of efficient methods for their combustion. Nearly all high viscosity fuel oils are also of high moisture content. Various methods of preparation of oil-water emulsions and their combustion have been investigated. As an example, the disposal is quoted of an effluent containing toxic organic substances, which was incorporated into fuel oil (10-25%) as an emulsion and then burned in works boilers. The possibility of processing fuel-water emulsions into industrial and domestic fuel

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gases is mentioned; in this case the water becomes a reagent and not simply a diluent. The direct combustion of water-coal suspensions is also mentioned. The most promising method is the simultaneous combustion of fuel and the evaporation of water carried out in the same space, the mixture of steam and combustion products being used in a steam gas-turbine for the production of power.

DELYAGIN, G.N.; KANTOROVICH, B.V.

New method for the continuous burning of a solid fuel. Trudy IGI 19: 178-193 '62. (MIRA 16:4)

(Combustion)

AID Nr. 990-7 14 June

MIXING OF GASES IN PIPE FLOW (USSR)

Kantorovich, B. V. IN: Teplo- i massoperenos, tom II: Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh (Heat and mass transfer, v. 2: Heat and mass transfer during phase and chemical transformations). Minsk, Izd-vo AN BSSR, 1962. 243-248. S/862/62/002/000/025/029

An analysis of mixing of gases during flow through a pipe or a cylindrical combustion chamber was made on the basis of the following assumptions: 1) unmixed and mixed gas volumes are present at any cross section; 2) mixed gas volumes are uniformly distributed by turbulence; 3) unmixed gases penetrate into the gas mixture by molecular diffusion and turbulent pulsations; 4) the mixing rate is dependent on the contact surface of the unmixed gas volumes, the latter being a function of the volume of the surrounding medium and the radius of the unmixed gas volumes; and 5) the intensity of molar mass transfer is characterized by the mass transfer coefficient based on the unit surface area of the unmixed gas volumes. On the basis of these assumptions a system of equations was formulated which describes the mixing of gaseous fuel with an oxidizer and the break-up of unmixed gas volumes and their gradual dispersion

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AID Nr. 990-7 14 June

MIXING OF GASES IN PIPE FLOW [Cont'd] S/862/62/002/000/025/029

into the surrounding medium. For the general case the system of equations can be solved only by finite difference methods or by electronic computation. To demonstrate the character of the solution, the equations were solved for the simplified case in which the fuel and air velocities are equal and constant and only one gas diffuses into the surrounding air-fuel mixture. The study was made at the Institute of Mineral Fuels, Academy of Sciences USSR. [PV]

Card 2/2

KANTOROVICH, B.V.

AID Nr. 992-13 5 18 June

MASS TRANSFER DURING COMBUSTION OF FUEL IN FLOW (USSR)

Delyagin, G. I., and B. V. Kantorovich. IN: Teplo- i massoperenos, tom II: Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh (Heat and mass transfer, v. 2: Heat and mass transfer during phase and chemical transformations). Minsk, Izd-vo AN BSSR, 1962, 249-259.

S/862/62/002/000/026/029

A complex analysis of liquid fuel combustion in an oxidizer stream was made on the basis of a quasi-heterogeneous combustion model which was formulated for solid, liquid, and gaseous fuels. Equations for the rate of combustion, the overall conservation of mass, the conservation of oxygen, the conservation of energy, an equation for the evaporation process, and the equation of state were formulated for an infinitesimal control volume with allowance for non-isothermicity along the combustion chamber. The equations were solved for two cases: 1) instantaneous fuel evaporation prior to combustion; and 2) combustion taking place simultaneously with evaporation where a) evaporation is controlled by the amount of heat evolved in combustion or b) the amount of evaporated fuel equals the amount of burned fuel. Three resulting equations

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MASS TRANSFER DURING COMBUSTION OF FUEL [Cont'd] S/862/62/002/000/026/029

were obtained which express the effect of excess air, fuel-consumption rate, and pressure on the combustion rate. The equations were verified by experiments in water-cooled cylindrical combustion chambers 214 and 185 mm in diameter in which kerosene or diesel fuel was burned in air at a fuel-consumption rate of 19.7 to 42 kg/hr and an excess air coefficient of 1 to 1.82. The discrepancy between theoretical and experimental data amounted to 10-12% at a fuel combustion of 50% and to 2% at a combustion of 80%. The equations were also applied to experimental data obtained previously by P. I. Isarenko, who studied the combustion of natural gas in a combustion chamber 1720 mm long and 325 mm in diameter at a fuel-consumption rate of 0.73 to 3 kg/hr. The results showed that the effect of operating variables on the intensity of combustion is analogous for both gaseous and liquid fuels. An increase in fuel-consumption rate decreases the combustion intensity, and an increase in excess air increases the intensity up to a given limit. The pressure has no effect under the conditions studied. The results confirm that combustion of gaseous and sprayed liquid fuel in an oxidizer stream is controlled by the mass-transfer rate rather than by the chemical-reaction rate. The study was made at the Institute of Mineral Fuels, Academy of Sciences USSR.

[PV]

Card 2/2

IVANOV, Viktor Mikhaylovich;KANTOROVICH, Boris Veniaminovich;
TARSHIS, D.M., red.izd-va;OBUKHOVSKAYA, G.P., tekhn. red.

[Fuel emulsions and suspensions] Toplivnye emul'sii i suspenzii. Moskva, Metallurgizdat, 1963. 182 p.
(MIRA 16:12)

(Fuel, Colloidal)

KANTOROVICH, B. V.

"The mixing of an incompressible fluid into a steady jet flowing in a space bounded by walls."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Inst of Combustible Minerals.

DELYAGIN, G.N.; KANTOROVICH, B.V.; KARACHINTSEV, V.I.; ONISHCHENKO, A.G.

Combustion of coal and water suspensions at a pilot plant. Ugol' 39 no.9:86-87 S '64. (MIRA 17:10)

KANTOROVICH, B.V., doktor tekhn. nauk, prof., otv. red.;
BANKVITSER, A.L., red.; NIKOLAYEVA, I.N., red.

[New methods for fuel burning and problems of the theory of combustion] Novye metody szhiganiia topliv i voprosy teorii goreniia. Moskva, Nauka, 1965. 205 p.
(MIRA 18:12)

1. Akademiya nauk SSSR. Institut goryuchikh iskopayemykh.

L 14480-66 EWT(1)/EWT(m)/T IJP(c) WW/JW/JWD/WE/GS

ACC NR: AT6004583 SOURCE CODE: UR/0000/65/000/000/0065/0071

AUTHOR: Kantorovich, B. V. (Doctor of technical sciences, Professor)

ORG: none

TITLE: Pressure and temperature distributions in the flow of combustion products under the influence of a magnetic field

SOURCE: AN SSSR, Institut goryuchikh iskopayemykh. Novyye metody szhiganiya topliv i voprosy teorii goreniya (New methods in the combustion of fuels and problems in the theory of combustion). Moscow, Izd-vo Nauka, 1965, 65-71.

TOPIC TAGS: combustion, combustion product, magnetic field

ABSTRACT: The flow of ionized gases in a transverse magnetic field was analyzed. The gases were assumed to be the products of partial combustion and the heat release during flow in the magnetic field was taken into consideration. It was also assumed that the flow is hydraulically uniform and that the magnetic induction along the flow axis is constant. The equations of continuity, motion, energy, and combustion kinetics were solved to obtain expressions for the pressure and temperature profiles and for the work done by the gas. Orig. art. has: 41 formulas and 1 figure. [PV]

SUB CODE: 21/ SUBM DATE: 09Sep65/ ORIG REF: 001/ OTH REF: 002/ ATD PRESS: 4199

Card 1/1

L 14479-66 EWT(1)/EWT(m)/T IJP(c) WW/JW/JWD/WE/GS

ACC NR: AT6004586 SOURCE CODE: UR/0000/65/000/000/0106/0111

AUTHOR: Alekseyev, A. M.; Kantorovich, B. V. (Doctor of technical sciences; Professor); Golovina, G. S.; Ivanov, V. M.; Pitin, R. N.; Ponnik, Yu. A.; Frenkina, Z. I.; Cheredkova, K. I.

ORG: none

TITLE: Study of the effect of a magnetic field on a stream of burning fuel

SOURCE: AN SSSR. Institut goryuchikh iskopayemykh. Novyye metody szhiganiya topliv i voprosy teorii goreniya (New methods in the combustion of fuels and problems in the theory of combustion). Moscow, Izd-vo Nauka, 1965, 106-111.

TOPIC TAGS: combustion, propulsion, magnetic field, gas combustion

ABSTRACT: It has been previously shown that the shape of a flame can be substantially changed and the burning velocity can be increased by the application of a magnetic field. Therefore, the use of a magnetic field to intensify combustion processes is considered in the present study, by determining the effect of a magnetic field on a burning CH_4-oxygen jet issuing from a combustion chamber through a 19.5 x 9.4 mm nozzle into air. Two cooled poles of a magnet 120 mm long were placed 15 mm from the nozzle outlet to generate a magnetic induction of 16 kgs in the 10-mm-wide gap through which the jet passed. The velocity of the gas jet was close to sonic. Measurements were made of the velocity, the flame temperature, and concentrations along the axis in the presence and absence of the magnetic field. The results

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L 14479-66

ACC NR: AT6004586

showed that due to the magnetic field the flame temperature increased by 100—200C, the velocity decreased, and the dilution with ambient air decreased. These changes are attributed to the partial conversion of kinetic into thermal energy caused by the magnetic field. Orig. art. has: 5 figures. [PV]

SUB CODE: 21/ SUBM DATE: 09Sep65/ ORIG REF: 002/ ATD PRESS: 4/94

Card 2/2

L 8994-66 EWT(l)/EWP(m)/EWT(m)/EPF(n)-2/T-2/EWA(m)-2/RTC(m) LIP(c) WW/WE

ACC NR: AP5016703 SOURCE CODE: UR/0294/65/003/003/0477/0480

AUTHOR: Kantorovich, B. V.

ORG: Institute of Mineral Fuels (Institut goryuchikh iskopayemykh)

TITLE: Pressure and temperature distribution in a stream of combustion products in the presence of a magnetic field

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 3, 1965, 477-480

TOPIC TAGS: MHD flow, combustion product, combustion gas dynamics, heat of combustion

ABSTRACT: The problem of ionized gas (combustion products) flow in a channel with conducting walls and an applied transverse magnetic field is investigated theoretically for stationary one-dimensional processes. The analysis includes the effects of heat production in the combustion reaction occuring in the flow. The magnetic Reynolds number is always small and the induced fields are small. The appropriate kinetic and transport equations are given together with a set of boundary conditions. This system is solved for a constant pressure in the flow channel and for constant gas conductivity. Orig. art. has: 2 figures, 40 formulas.

SUB CODE: 20,21/ SUBM DATE: 25Nov64/ ORIG REF: 001/ OTH REF: 002

UDC: 538.4

Card 1/1

L 21197-66 EWT(1)/EWT(m)/EWA(d)/T/EWA(1)/ETC(m)-6 WW/JW/JWD/WE/GS
ACC NR: AT6004581 SOURCE CODE: UR/0000/65/000/000/0005/0035

AUTHOR: Kantorovich, B. V. (Doctor of technical sciences, Professor)

ORG: none

TITLE: Stream mixing in a space bounded by walls

SOURCE: AN SSSR. Institut goryuchkikh iskopayemykh. Novyye metody szhiganiya topliv i voprosy teorii goreniya (New methods in the combustion of fuels and problems in the theory of combustion). Moscow, Izd-vo Nauka, 1965, 5-35

TOPIC TAGS: fluid mechanics, fluid kinetics, flow deflection, converging flow, flow analysis

ABSTRACT: The theory of the behavior of the velocities of two streams (liquid or gas) during mixing in a space bounded by walls is studied in order to learn more about the phenomena occurring in fuel combustion processes. The aspect of fuel recirculation due to stream mixing received primary attention. This work was presented in part at the Second All-Union Conference on Mass and Heat Exchange held in May 1964 in Minsk and at the Fourth Conference on Evaporation, Combustion, and Gas

Card 1/2

L 21197-66
ACC NR: AT6004581

Dynamics of Dispersed Systems held in October 1964 in Odessa. The author expressed his appreciation to Z. I. Freikina, senior scientific associate at the combustion processes laboratory for her help in the calculations and in the preparation of diagrams. Orig. art. has: 13 figures, 104 formulas.

SUB CODE: 21/ SUBM DATE: 09Sep65/ ORIG REF: 009/ OTH REF: 001

Card 2/2 dda

L 21815-66 EWT(1)/EWT(m)/T (N) WW/JW/WE/GS
ACC NR: AT6004587 SOURCE CODE: UR/0000/65/000/000/0112/0119

AUTHOR: Kantorovich, B. V. (Doctor of technical sciences, Professor); Pitin, R. N.; Cheredkova, K. I.

ORG: none

TITLE: Investigation of the conductivity of gas-air flame containing solid fuel particles

SOURCE: AN SSSR. Institut goryuchikh iskopayemykh. Novyye metody szhiganiya topliv i voprosy teorii goreniya (New methods in the combustion of fuels and problems in the theory of combustion). Moscow, Izd-vo Nauka, 1965, 112-119

TOPIC TAGS: flame temperature, electric conductance, temperature distribution, combustion temperature

ABSTRACT: The effect of solid fuel particles on electric conductivity and temperature distribution along the axis of a flame obtained by burning of methane-air mixture were investigated. In all experiments the air excess coefficient α was equal to 0.95 and the burning gas mixture flow rate was equal to 4.5 m/sec. The diameter of the solid particles varied with 0-250 microns and their concentration in

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L 21815-66
ACC NR: AT6004587

0

the gas mixture varied with 0-5.7%. The solid particles were made of lignite from Moscow Oblast, shale, hard coal from Polysayevo and coke. These solid fuels contained various quantities of BaO, Sr, Li, Rb, Cs, SiO_2, Al_2O_3, Mn_3O_4, Fe_2O_3, TiO_2, CaO, MgO, K_2O, and Na_2O. In general, the presence of solid particles in the methane--air flame results in increased flame electrical conductivity and in an extended region of high electrical conductivity as compared with solid free flames. The change of maximum electrical current and temperature of the flame due to the presence of various solid fuels is shown in figure 1. Orig. art. has: 6 figures, 2 tables.

Card 2/3

L 21815-66
ACC NR: AT6004587

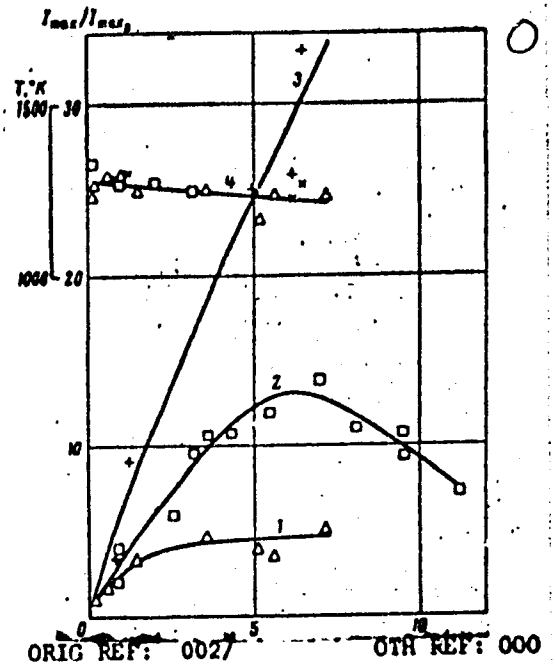

Fig. 1. 1,Δ--lignite from Moscow region; 2,[]--Polysayevo hard coal; 3, ×--shale; 4--temperature curve

SUB CODE: 21/ SUBM DATE: 09Sep65/ ORIG REF: 002/ OTH REF: 000

Card 3/3 PB

L 21816-66 EWT(1)/EWT(m)/T WW/JW/WE/JXT(CZ)/GS
ACC NR: AT6004588 (N) SOURCE CODE: UR/0000/65/000/000/0120/0125

AUTHOR: Golovina, G. S.; Kantorovich, B. V. (Doctor of technical sciences, Professor); Fitin, R. N.

89
B+1

ORG: none *

TITLE: The effect of combustion conditions on electrical conductivity in a gas-air flame

SOURCE: AN SSSR. Institut goryuchikh iskopayemykh. Novyye metody szhiganiya topliv i voprosy teorii goreniya (New methods in the combustion of fuels and problems in the theory of combustion). Moscow, Izd-vo Nauka, 1965, 120-125

TOPIC TAGS: flame, flame temperature, combustion temperature, conduction electron, electric conductance, methane

ABSTRACT: The effect of the air excess factor and the rate of gas flow on electrical conductivity in methane-air flames were investigated. The experimental setup is shown in figure 1. The maximum electrical conductivity of the flame falls within $\alpha = 0.8\text{-}1.0$; α is the air excess coefficient. It was found that the magnitude

2

Card 1/3

L 21816-66

ACC NR: AT6004588

and distribution of electrical conductivity in the flame depends upon the flow rate of the combustible gas mixture. An increase in the flow rate of air-rich mixtures results in higher maximum electrical flame conductivity while the reverse is true for air-lean mixtures. The dependence of the magnitude of the maximum electrical current upon α is shown in figure 2. The dependence of the maximum current along the flame axis upon gas mixture flow rate at various α's and electron current between the electrodes along the flame axis as a function of gas mixture flow rate at various air excess coefficients are graphed. Orig. art. has: 6 figures.

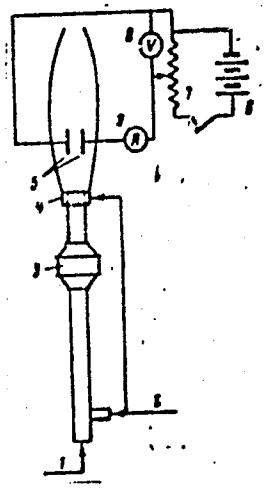

Fig. 1. 1--air from a compressor; 2--town gas; 3--mixer; 4--flame initiator; 5--electrodes; 6--battery; 7--resistor; 8--voltmeter; 9--a microammeter.

Card 2/3

L 21816-66

ACC NR: AT6004588

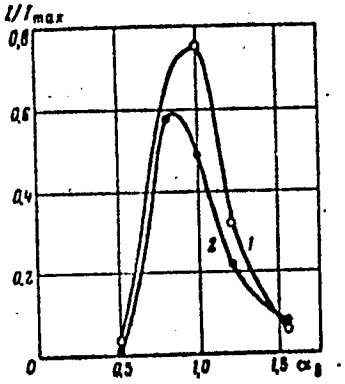

Fig. 2. The dependence of the magnitude of the maximum electrical current (I/I_{max}) upon the air excess coefficient α for various gas mixture flow rates v:
1--v = 4.35 m/sec; 2--v = 2.98 m/sec.

SUB CODE: 21,07/ SUBM DATE: 09Sep65/ ORIG REF: 005/ OTH REF: 002

Card 3/3 nst

L 28435-66 EWT(1) IJP(c) CC

ACC NR: AP6017964 SOURCE CODE: UR/0413/66/000/010/0041/0041

INVENTOR: Kantorovich, E. G.; Tikhonov, Yu. P.

ORG: none

TITLE: Bolometer head. Class 21, No. 181689

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 10, 1966, 41

TOPIC TAGS: bolometer, IR detection equipment

ABSTRACT: A bolometric head containing a v-shaped plane bolometer placed in a section of a circular waveguide along its longitudinal axis (see Fig. 1) is introduced. To increase the range of measurements and to assure the possibility of using the device as a measuring attenuator, the section of the circular waveguide containing the bolometer is made to rotate. Orig. art. has: 1 figure. [JR]

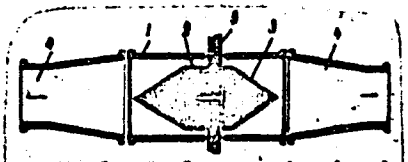

Fig. 1. Bolometric head

1 - Waveguide section; 2 - bolometer; 3 - wedge; 4 - junctions; 5 - leads

SUB CODE: 18/ SUBM DATE: 24Mar65/

ATD PRESS: 5007

Card 1/1 PB UDC: 621.317.794

GOYKOLOV, Ye.F.; KANTOROVICH, I.G., inzh.; PETROV, P.V.; RAYTSESS, A.Ya.; CHERNOV, A.V., inzh.; SHASHKOV, V.F.; SHISHKOV, I.A.; SHMIDT, Kh.M.; KEYMAKH, L.I., retsenzent; KUDRYAVTSEV, A.V., retsenzent; V redaktirovanii prinimali uchastiye: ZOTOV, A.V.; TELYANER, D.M.; SHIROKOVA, G.M., red.izd-va; STEPANOVA, E.S., tekhn.red.; RUDAKOVA, N.I., tekhn.red.

[Handbook for builders of reinforced concrete industrial chimneys and silos] Spravochnik stroitelia zhelezobetonnykh zavodskikh trub i silosov. Pod red. A.V.Chernova. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 300 p. (MIRA 13:1)

(Silos) (Chimneys)

KANTOROVICH, I.N.

Sep/Oct 48

USSR/Medicine
Vascular System
Nervous System

"The Vasomotor Center and Sympathetic Innervation of the Vessels," I. N. Kantorovich, G. P. Konradi, Frunze, 15½ pp

"Uspekh Sovrem Biol" Vol XXVI, No 2 (5)

Although we cannot assert categorically that the vasomotor and possibly the respiratory center make up the regulatory region in the stimulation of corresponding spinal ganglia, we do consider such a viewpoint admissible. It depends, however, on findings of [illegible] on the innervation of respirator

60/49T76

Sep/Oct 48

USSR/Medicine (Contd)

findings of experiments on the innervation of respiratory and vascular systems carried out 50 years ago.

60/49T76

KANTOROVICH, I. N.

32772. Klinika malyarii v Kirgizii. [Po materialam kirgiz. gos. Med. In-ta za 1945 g.] Sbornik nauch. Trudov (kirgiz. Gos. Med. In-t), T. IV, 1949, s. 80-89

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

CA KANTOROVICH, I.N.

Dept Normal Physiol.,

Blocking of sympathetic innervation of vessels with procaine. I. N. Kantorovich (Kirgiz Med. Inst.), *Fiziol. Zhur. S.S.S.R.* 33, [illegible] (1950).—Introduction of 50 mg./kg. procaine into dogs (intravenous) leads to disappearance of high blood pressure response to stimulation of afferent fibers of sciatic and thigh nerves. Asphyxia after procaine administration does not cause high blood pressure. Stimulation of spinal cord below the site of its section, in upper chest, gives smaller blood pressure rise after procaine administration, than occurs before; blocking of adrenals before procaine completely removes pressor effects of spinal cord stimulation. G. M. Kondratieff

USSR/Medicine - Cholinolytic Agents Mar/Apr 53

"Comparison of the Cholinolytic Activity of a Number of Local Anesthetics and Correlation of This Activity With the Local Anesthetic Effects," I. N. Kantorovich, Chair of Normal Physiol, Kirgiz State Med Inst

Farmakol i Toksikol, Vol 16, No 2, pp 18-19

Measured changes in blood pressure resulting from administration of acetylcholine to atropinized animals before and after novocain, cocaine, or sovcain had been introduced into their blood.

249T70

Found that there is no correlation between the cholinolytic effect of these anesthetics and their local anesthetic effect. The cholinolytic effect of novocain is strongest, that of sovcain weakest. The cholinolytic action of sovcain is noticeable only when the dose is lethal or close to lethal.

249T70

PA 249T70

KOSTOROVICH, I.N.

Modifications in the excitability of the central nervous system in insulin intoxication. Fiziol. zhur. 40 no.6:697-703 N-D '54. (MLRA 8:2)

1. Kafedra normal'noy fiziologii Kirgizskogo meditsinskogo instituta.
(INSULIN, effects,
CNS irritability in insulin shock in dogs)
(CENTRAL NERVOUS SYSTEM, physiology,
irritability, eff. of insulin shock in dogs)

KANTOROVICH, I. N. Doc Med Sci -- "Experimental insulin intoxication [illegible] (Role of the functional state of the organism in the development of insulin intoxication)." Len, 1960 (Acad Sci USSR. Inst of Physiology im I. P. Pavlov). (KL, 1-61, 204).

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1964

Obstetrics
(Minsk)

Kantorovich L. N.

EXCERPTA MEDICA Sec 7 Vol 13/1 Pediatrics Jan 59

22. THE METHOD OF EARLY AUTOPLACENTAL BLOOD INJECTIONS AS A PROPHYLACTIC AND THERAPEUTIC MEASURE IN THE TREATMENT OF INTRACRANIAL HAEMORRHAGES IN THE NEWBORN (Russian text) - Kantorovich L. N., Bogomazova L. M. - ZDRAVOOKHR. BELOR. 1956, 12 (23-26)

Timely injections of autoplacental blood are indicated in all cases of deviation from the normal in labour accompanied by traumatization of the foetus or stasis contributing to the rupture of vessels. Injections of autoplacental blood were administered early to 542 newborns (first group); a control group contained the same number of cases. In the group of newborns who had injections of autoplacental blood, the over-all mortality in traumatized newborns was 5.9% as against 12.5% in the control group, a definite clinical picture of haemorrhage was noted in 6.4% of the first group and in 16.2% of the controls; death from intracranial haemorrhage occurred in 2.4% of the first group and in 7% of the controls. The injection of autoplacental blood at birth lessens the total mortality by 2.5 times, the mortality from intracranial haemorrhage nearly 3 times, and morbidity 2.5 times; in addition, these injections improve the general state of the baby traumatized during birth.

(S)

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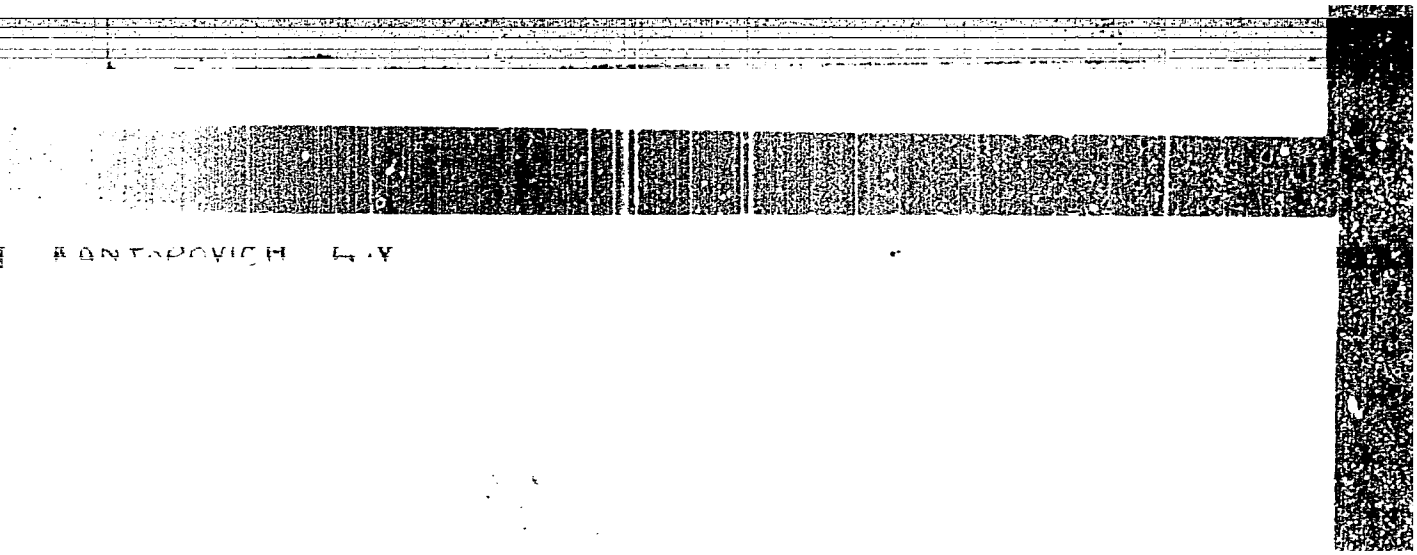

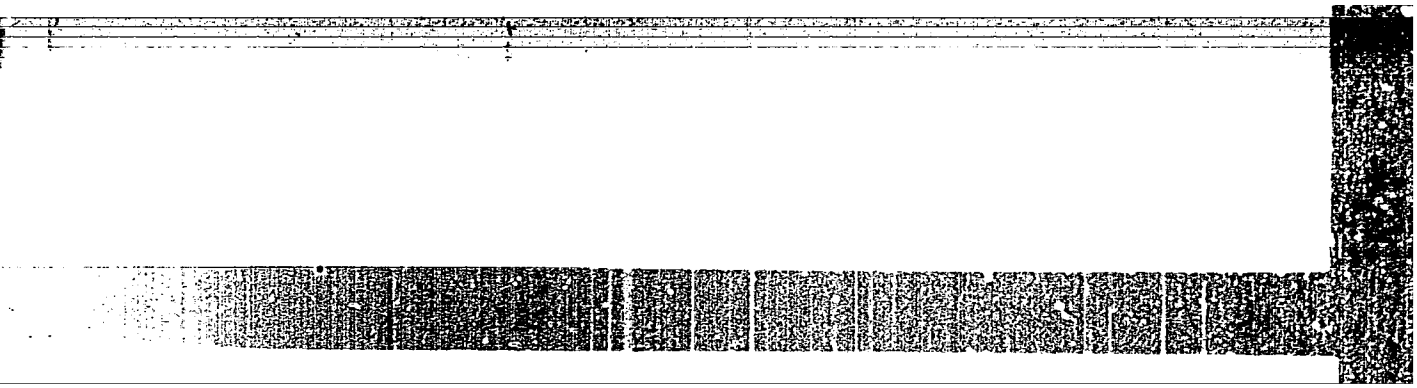

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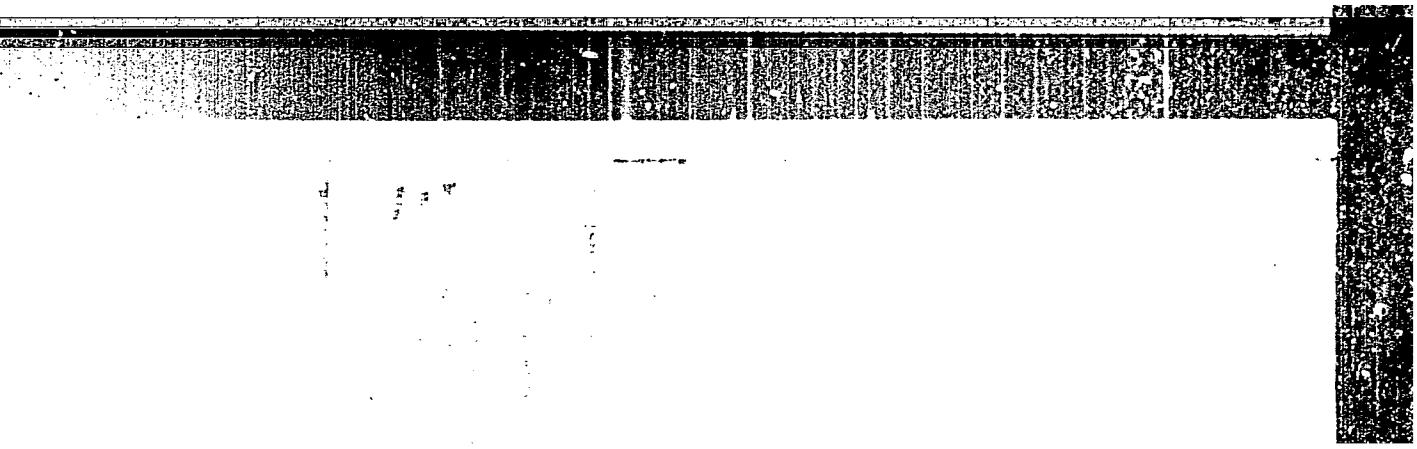

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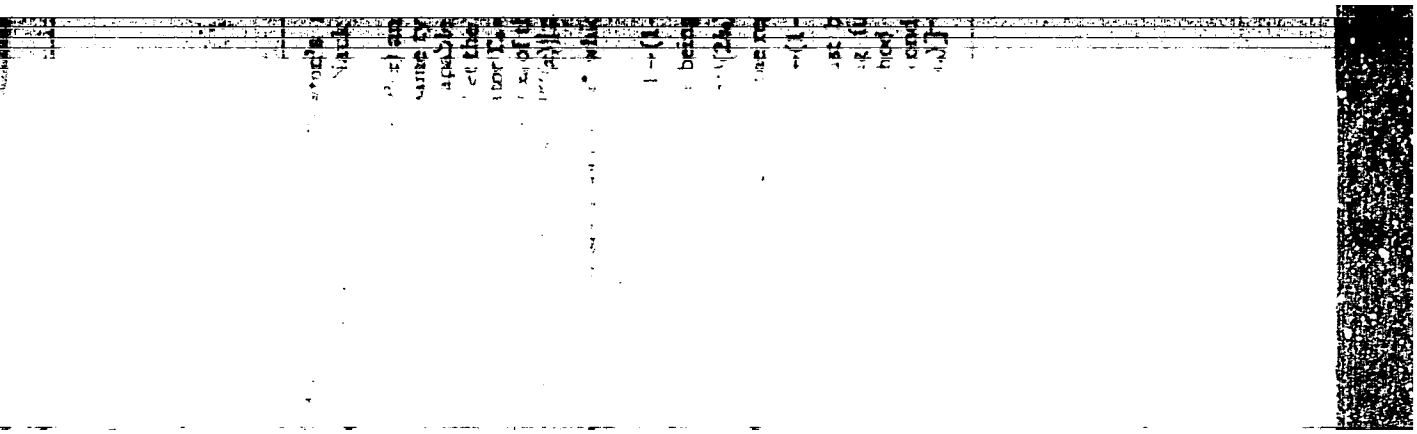

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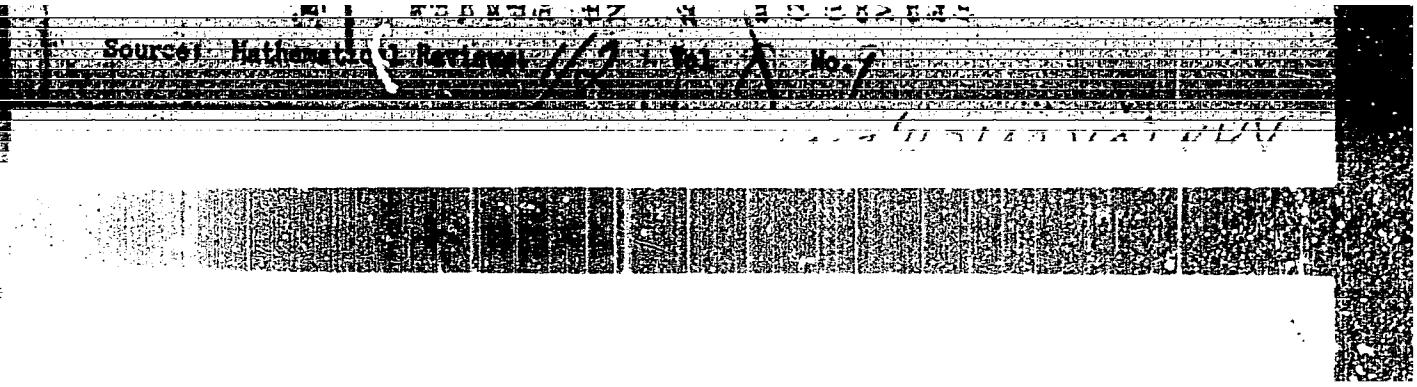

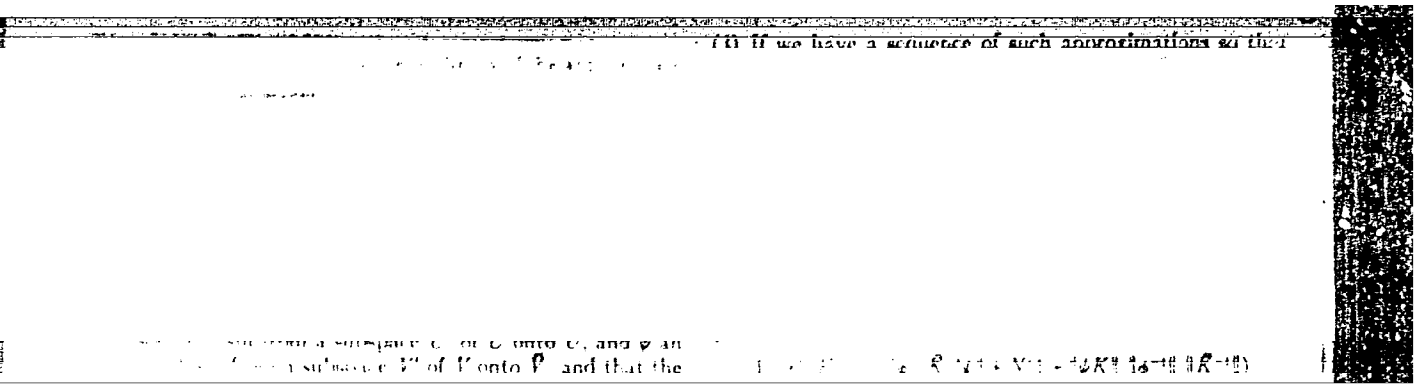

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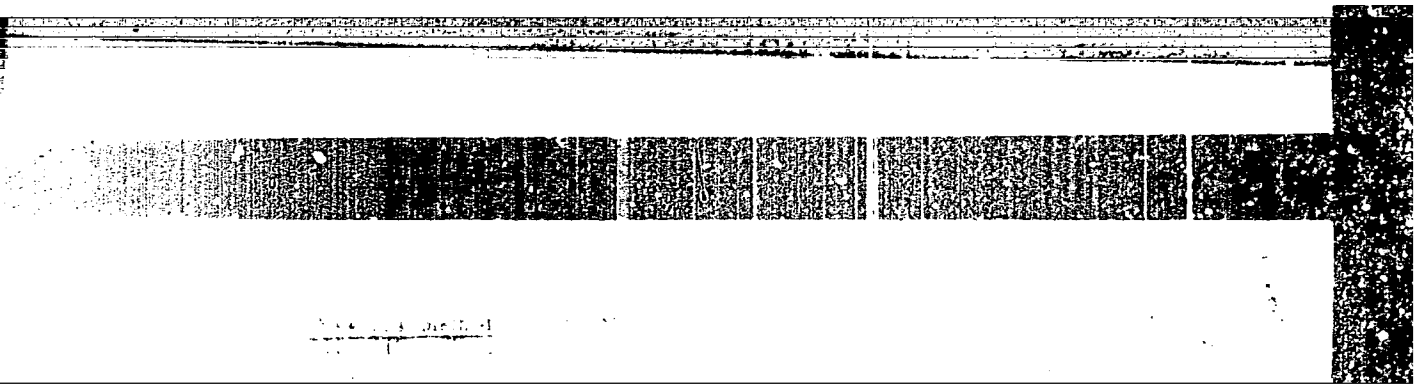

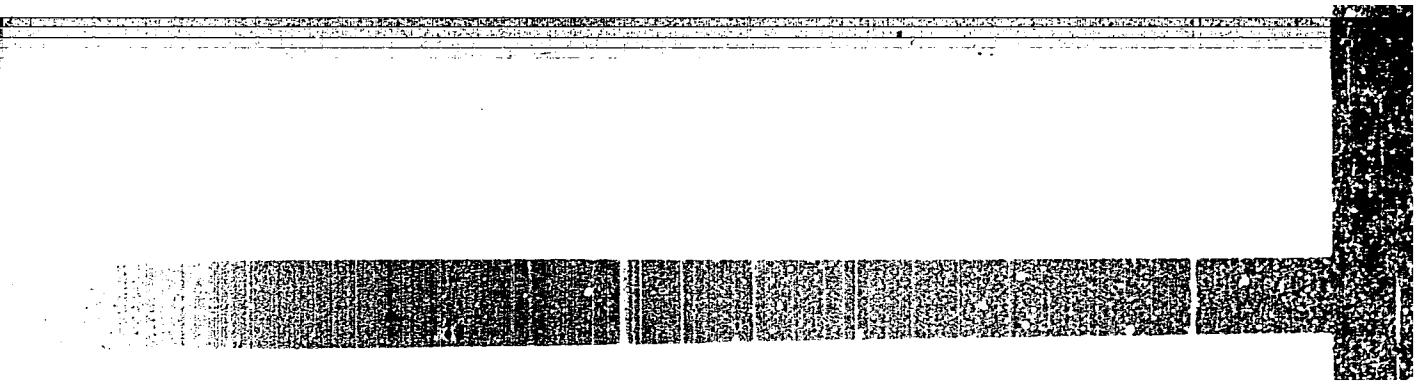

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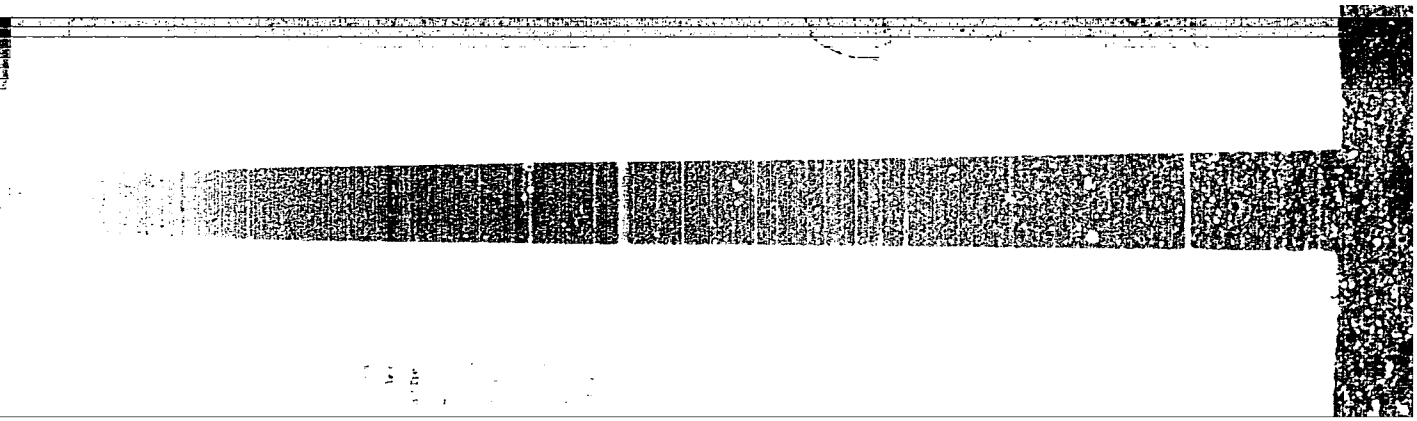

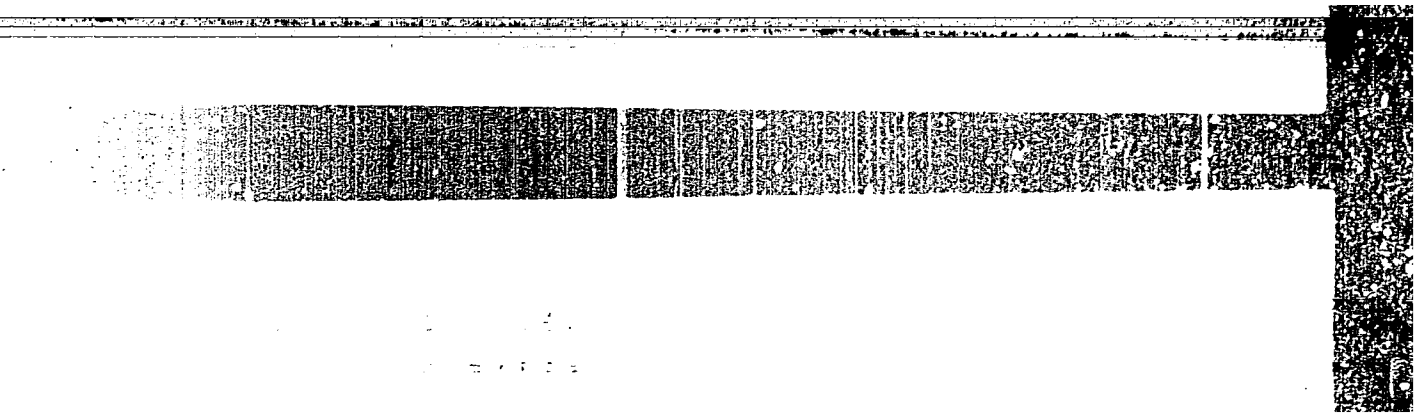

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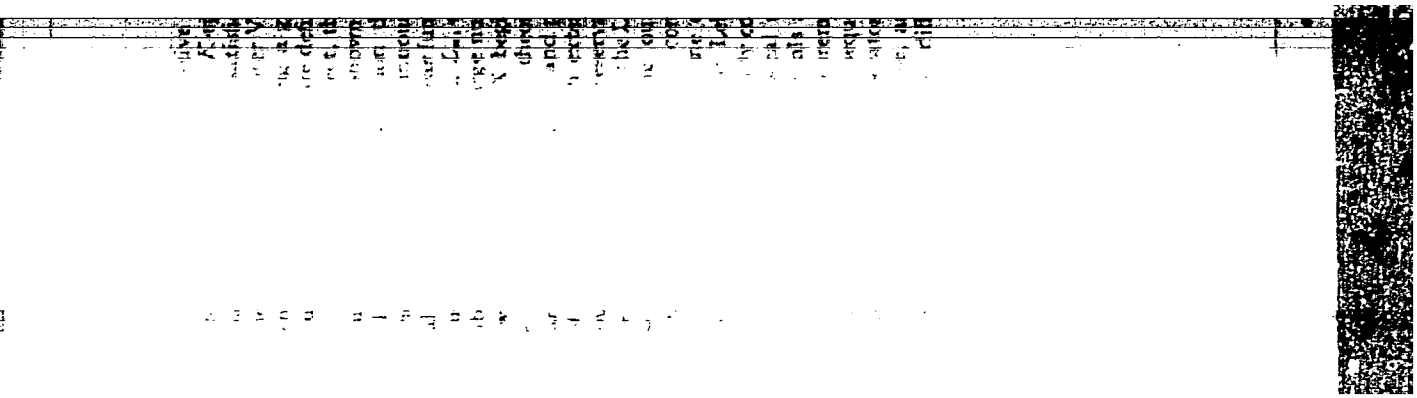

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